

PATENT  
Atty. Dkt. No. ROC920030129US1  
MPS Ref. No.: IBM/G30129

### REMARKS

This is intended as a full and complete response to the Office Action dated January 27, 2005, having a shortened statutory period for response set to expire on April 27, 2005. Please reconsider the claims pending in the application for reasons discussed below.

In the specification, the paragraphs 4, 5, 8, and 50 have been amended to correct minor editorial problems. Claims 1-10 and 21-33 are pending in the application. Claims 1-10 and 21-33 remain pending following entry of this response. Applicants submit that the amendments do not introduce any new matter.

#### Election/Restrictions

Claims 1-33 stand restricted under 35 U.S.C. § 121 as follows:

- Group I. Claims 1-10 and 21-33, drawn to object oriented database structure, classified in class 707, subclass 103R.
- Group II. Claims 11-20, drawn to query processing, classified in class 707, subclass 3.

Applicants elect Group I (claims 1-10 and 21-33). The present election is in no way an indication of presumed unpatentability of either the elected or non-elected claims. Applicants believe that claims 11-20 are patentable and Applicants reserve the right to pursue the non-elected claims in a continuing application.

#### Claim Rejections - 35 U.S.C. § 101

Claims 1-7 and 8-10 are rejected under 35 U.S.C. § 101. The Examiner asserts that the language of these claims raises a question as to whether the claimed method is directed merely to an abstract idea that is not tied to a technological art, environment, or machine. Applicants have, with this response, amended these claims to clarify that claimed methods are directed to a "computer implemented method" for representing and providing access to data stored in an "underlying physical database." Applicants assert that claims 1-7 and 8-10 are clearly within the technological arts of computer

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systems generally, and database systems in particular. Therefore, Applicants respectfully request that the Examiner withdraw this rejection.

Claim Rejections - 35 U.S.C. § 102

Levine

Claims 1-7, 8-10 and 29-33 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,640,221 issued to *Levine et al.* (hereinafter "*Levine*").

Applicants respectfully traverse this rejection.

Regarding claims 1, 8, and 29, "A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). "The identical invention must be shown in as complete detail as is contained in the ... claim." *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989). Further, to anticipate a claim, the elements disclosed by the reference must be arranged as required by the claim. *In re Bond*, 910 F.2d 831, 15 USPQ2d 1566 (Fed. Cir. 1990).

In this case, *Levine* fails to disclose "each and every element as set forth in the claim." For example, *Levine* fails to disclose providing a logical model to logically describe the physical fields of the underlying physical database. Further, *Levine* fails to disclose a logical model comprising logical fields that correspond to respective physical fields, wherein each logical field is defined by a logical field name, at least one location attribute identifying a location of physical data corresponding to the logical field name and a reference to an access method selected from at least two different access method types, wherein each of the different access methods types defines a different manner of exposing the physical data corresponding to the logical field.

The Examiner asserts that *Levine* discloses providing a logical model to logically describe the physical fields of the underlying physical database in Figure 1 at blocks 30A – 30C, "wherein block 30A represents the logical model of the employee table and its related fields (such as empnum, empname, empyears, emptitle, empboss), which

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corresponds to receptive physical table and fields of physical data entities." *Office Action*, p. 5.

However, the query tool disclosed by *Levine*, as illustrated in Figure 1, is directed to an SQL query tool for creating and manipulating SQL queries. *Levine*, 4:57-58. Specifically, box 30A displays a table and relations to other tables in a window. *Levine*, 6:33-36. "The depiction of the selected table 30A includes a title, such as EMPLOYEE, and also includes the column names 32 that comprise the table. By selecting several tables 30A, 30B, 30C, the user of the tool 10 can create a complex SELECT statement including multiple tables." *Levine*, 6:39-42. Clearly, the query tool disclosed by *Levine* requires that users have an understanding of the underlying physical structure of the database being queried. Thus, *Levine* fails to disclose an abstraction of the underlying physical database, using logical fields or otherwise. Instead, *Levine* discloses a direct interface to the underlying physical database (e.g., the tables, columns, rows) allowing a user to build an SQL query. That is, the user builds SQL queries with direct reference to the underlying physical entities, i.e., tables and columns (e.g., the empnum, empname, empyears, emptitle, empboss of the employee column). Thus, *Levine* fails to disclose providing a logical model of the underlying database, wherein a user composes an abstract query from a plurality of logical fields. Further, *Levine* fails to disclose providing a definition for each logical field specifies an access method to expose data from the particular underlying physical representation. Because *Levine* discloses an interface wherein a user builds a query using the underlying physical representation directly, rather than from logical fields, there is no need for an access method to map from a logical field to the underlying physical representation.

Furthermore, *Levine* fails to disclose providing a runtime component configured to transform an abstract query into an executable query. Quite simply, because *Levine* fails to disclose a logical model for composing an abstract query, there is nothing to transform into an executable query. Instead, *Levine* discloses an SQL query building tool that allows a user to "create a complex SELECT statement [i.e., an SQL query] including multiple tables." *Levine*, 6:41-42.

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Therefore, Applicants submit that claims 1, 8, and 29, as well as the claims dependent therefrom, are patentable over *Levine*. Accordingly, Applicants respectfully request that the Examiner withdraw this rejection.

Maslyn

Claims 21-23 and 24-25 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,408,308 issued to *Maslyn et al.* (hereinafter "*Maslyn*"). Applicants traverse this rejection.

Regarding claims 21 and 24, *Maslyn*, like *Levine*, fails to disclose providing a logical model to describe the physical fields of an underlying physical database. The examiner cites to Figures 7A-7K, column 6, lines 61-67; these figures, and the accompanying description, however, depict tables from a relational database. Regarding these figures, *Maslyn* Provides: "Each table is represented by a block with the name of the table listed above the block such as 'PMDDatatSource table.' The tables store records." *Maslyn*, 6:61-65. Figure 7A is illustrative and depicts a "PMDDataSource" table that includes two columns, a "PMD Data Source" and "PMD data Source Description." Applicants submit that the PMDData Source Table (and tables illustrated in *Maslyn*, Figures 7B-7K) fails to disclose a logical model. Quite the contrary, these tables illustrate directly the structure of the underlying physical database, in this case a set of relational tables.

Nor does *Maslyn* disclose receiving user input specifying a selection and a location, in the graphical user interface, of a second logical result field, wherein the first and second logical result field have a relative geometric relationship and define at least a portion of an abstract query. The Examiner cites to Figure 10B (block 608), column 12, lines 59-67 and column 13, lines 1-5 to support the assertion that *Maslyn* discloses this limitation. The material cited by the Examiner however, is directed to a

hybridization query parameters procedure [that] generates a query parameters window. A set of buttons allows a user to select data sets using different parameters. The major query categories are hybridization, transcript, microarray, sample, and data source. The user can select any combination of query criteria by selecting data across these categories.

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*Maslyn*, 12:33-38. Specifically, Figure 10B illustrates a "hybridization working set selection screen window of the graphical user interface." The window allows a user to "select one or more datasets by pressing an add button" and allows a user to select checkboxes to select "the basis or bases data set for comparisons." *Maslyn*, 12:59-67. Applicants submit that none of this material discloses placing, in the user interface display, logical fields based on a relative geometric relationship. Specifically, nothing in the relative placement, or manipulation of any element in the GUI interface of *Maslyn*, will impact a resulting query. Rather, the placement of GUI elements disclosed by *Maslyn* is arbitrary, relative to an SQL query being composed. *Maslyn* does not disclose transforming the abstract query into an executable query being generated as a result of the relative geometric relationship.

Therefore, Applicants submit that claims 21 and 24, as well as the claims dependent therefrom, are patentable over *Maslyn*. Accordingly, Applicants respectfully request that the Examiner withdraw this rejection.

Claim Rejections - 35 U.S.C. § 103

Claims 26-28 are rejected under 35 U.S.C. 103(a) as being "anticipated" over *Levine* and further in view of *Maslyn*. Applicants respectfully traverse this rejection. Applicants request, however, that the Examiner clarify this rejection. The Office Action states that claims 26-28 are rejected as being "anticipated" over *Levine* and further in view of *Maslyn*.

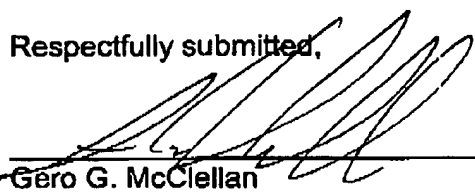
Regarding claim 26-28, Applicants submit, for the reasons given above, that *Levine* fails to disclose providing a logical model, and further, for the reasons given above, that *Maslyn* fails to disclose receiving user input specifying a first and second logical result fields have a relative geometric relationships. Thus, Applicants submit that the rejection of claims 26-28 is obviated without the need for further remarks by Applicants. Accordingly Applicants submit that claims 26-28, are patentable over *Levine* and further in view of *Maslyn*, and respectfully request that the Examiner withdraw this rejection.

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Conclusion

Having addressed all issues set out in the office action, Applicants respectfully submit that the claims are in condition for allowance and respectfully request that the claims be allowed.

Respectfully submitted,

  
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